PROPERTY PLANNING COMMON ELEMENTS

COMPONENTS OF MASTER PLANS

HABITATS AND THEIR MANAGEMENT

Direct Seeding and Planting

Description

Direct seeding and planting are two methods that can be used to accomplish artificial regeneration or aid natural regeneration. Each method has advantages and disadvantages in terms of ecology, site preparation needs, operational logistics, and associated costs.

Direct Seeding

Seeding is a good technique for inexpensively regenerating small areas or quickly reforesting large areas. Seed can be sown with a variety of equipment including seeding sticks, dribblers, broadcast seeders, or seed drills. Direct seeding is used for conifers and for some hardwoods, such as oaks. Proper seed collection, handling, and storage are critical to the success of this method. Seeds should be collected during an abundant year from high-quality, well-adapted trees, and must be properly stored and stratified, if needed, to maximize germination rates. Additional treatments (e.g., mowing of grass or removal of leaf litter) may be needed to protect planted seeds from seed predators (rodents).

Advantages

- Less expensive for conifers or small areas
- Quick establishment of tree cover to capture the site
- Can be used on difficult terrain or shallow soils
- Good root development with no transplant shock
- Potential for more uniform stocking than in a naturally regenerated stand
- Natural stand appearance (no rows or uniformly spaced trees)
- Improved hardwood stem quality in high-density plantations

Disadvantages

- Often not successful (although many instances can be attributed to lack of planning).
- Careful planning is needed as multiple factors can influence seed germination in highly variable field environments.
- Intensive site preparation and follow-up may be needed to control competing vegetation.
- Difficulty in controlling stand density.
- Greater cost for hardwoods depending on quantity of seed used.

- Small planting areas may suffer heavy seed predation.
- Hardwood seed is difficult to obtain in most years and does not store well.

Planting

This method involves the planting of seedlings, either containerized stock or bareroot stock. Containerized stock is typically smaller and often restricted to conifers. Bareroot stock includes both conifers and hardwoods and the seedlings typically are larger. Interplanting refers to the planting of new seedlings between or among existing forest growth in order to supplement natural regeneration. It is almost always accomplished through hand planting. Underplanting is similar to interplanting but is done prior to the final harvest of a mature forest stand in an attempt to establish a desired species in the future stand. Underplanted species must be able to tolerate shade for several years until they are established and the overstory is removed. Damage to the planted trees must be limited or avoided when overstory removal occurs.

As with seeds, proper transportation, storage, and handling of seedlings is critical to success. Seedlings can be either hand planted or machine planted. Machine planting is well suited to large areas, even terrain, heavy soils, and planting hardwoods with large root systems. Hand planting is necessary in areas with rough or steep terrain, when seedlings are too large for machine planting, or when interplanting within an existing stand.

Advantages

- Chance of success often is higher than with direct seeding.
- Seedlings are more competitive with interfering vegetation.
- Greater control over stand density.
- Planting gives a head start of several years over seeding.
- Can be designed to facilitate future management activities.

Disadvantages

- Higher initial cost than seeding.
- Transportation and storage needs are more difficult/complex.
- Root pruning of seedlings may be needed.